

CH486: POLYMER REACTION ENGINEERING

CREDITS = 4 (L = 4, T=0, P = 0)

1. **BASIC CONCEPT OF POLYMER:** polymer chemistry. 6 Hours
Classification of polymers. Mechanism and kinetics of polymerization.
2. **POLYMER SOLUTIONS:** Process of polymer dissolution, The 14 Hours
Flory-Huggins theory of polymer solutions, Nature of polymer molecules in solutions, Size and Shape of macromolecules in solutions, Viscosity and dilute and concentrated polymer solutions.
3. **POLYMERIZATION REACTION ENGINEERING:** emulsion 12 Hours
polymerization, dispersion polymerization etc. Reactors for polymerization: analysis of polymerization reactions, Reactor design applied to polymer system, Average molecular weight of polymer in different reactor, Control of molecular weight.
4. **RHEOLOGY OF POLYMERIC SYSTEM:** Unit operations in 8 Hours
polymer industries. Polymer processing: moulding, calendaring, extrusion etc.

REFERENCE BOOKS

Title: Principles of Polymer Systems
Author: Ferdinand Rodriguez
Publisher: Tata McGraw Hill

Title: Polymer Science and Technology
Author: Joel R Fried
Publisher: Prentice Hal of India

Title: Polymer Science & Technology of Plastic and Rubbers
Author: Premamoy Ghosh
Publisher: Tata McGraw Hill.